

Remarks:

This amendment is submitted in an earnest effort to advance this case to issue without delay. The examiner has indicated that the case contains allowable subject matter.

Claims 1 and 10 have been amended to clearly state that a weft or warp yarn is threaded through each disk and that the disk edges are oriented transversely of the fabric, as clearly shown in FIGS. 1 and 8. Such orientation ensures that they have the projectile-shredding ability clearly described in these claims.

With the instant invention the beads or disks 15 are held solidly in place by the weft and/or warp yarns in such a position that any projectile is shredded by them into low-energy particles that are effectively stopped by the adjacent ballistic-fiber layer located behind the disks. The armor is therefore flexible and light, but has actual bullet-stopping power.

In US patent 2,445,801 of Partiot there are several layers of sheet metal that are welded together with interposition of flat disks 17. There is nothing resembling a "woven fabric" or the "yarns" of claims 1 and 10. Neither is anything threaded through the disks 17, nor are these disks 17 oriented with their edges transverse to the fabric. Thus the structure is wholly different, making a §102 rejection on this reference impossible.

Going further, while Partiot is indeed aimed at an armored structure, the structure shown has no active projectile-shredding function. Indeed, FIG. 2 clearly shows that the disks 17 are spaced so far apart that only a tiny fraction of projectiles shot into it would actually touch one of the disks. What is more, the disks are oriented flat, in the plane of the structure, so that there would be no cutting action at the disk edges. This is an altogether different structure that in no way suggests the edgewise-mounted disks of claims 1 and 10, making a §103 rejection impossible also.

US patent 4,786,541 of Nishimara is even further afield. It is formed by a plurality of layers of woven-together flat filament 3, 4, 5, and 6 that are held together by stitching 7. There is nothing resembling the metal disks of claim 1 and 10, much less disks oriented on edge with the filaments passing through them. Thus if the sheet-metal layers of Partiot were replaced with the filament layers of Nishimara, there would still be no teaching or suggestion of filaments passing through disks oriented transversely of the fabric. A combination §103 rejection on the teachings of Nishimara and Partiot is therefore out of the question.

Finally, US patent 5,362,527 of Harpell can basically be said to show this combination of the teachings of Nishimara and Partiot, that is a structure with fabric layers and flat metal

pieces between the layers. Here the weft and/or warp filaments of the fabric layers do not pass through the metal parts. Instead separate stitching is employed and the metal elements are applied to the face of the fabric, not integrated into it. Furthermore the metal parts are oriented in the plane of the fabric, so that the projectile-shredding action critical to the instant invention is not achieved or suggested. Thus no valid rejection of amended claims 1 and 10 on Harpell under §103 is possible either.


For the record, the examiner's attention is directed at US patents 5,736,474 and 6,846,545 both of Thomas. The '474 patent is of some interest in that it shows a layer of hard "deflection devices" imbedded in an armored fabric. These elements are not, however, comparable to the woven-in disks oriented transverse to the plane of the fabric as defined in claims 1 and 10, so that these references add nothing to the teachings of the other above-discussed references to form a solid rejection of the claims.

For these reasons all the claims in the case are clearly in condition for allowance. Notice to that effect is earnestly solicited.

If only minor problems that could be corrected by means of a telephone conference stand in the way of allowance of this

case, the examiner is invited to call the undersigned to make the necessary corrections.

Respectfully submitted,
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